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Conservation Tillage

Shows Large Gains In Corn and Soybeans

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PERSPECTIVES

This is the last issue of ***FARMLINE***.

During the magazine's 13-year history, it has provided economic information about agriculture and rural America to a general audience--people not necessarily expert in economics--throughout the United States and in other countries as well.

Such information is produced, compiled, and analyzed by ***FARMLINE***'s parent agency--USDA's Economic Research Service. The agency's economists and other scientists conduct research and provide analysis on many aspects of agriculture and rural life. The job of the ***FARMLINE*** staff was to publish that research and analysis in a form that was most useful to our readers. We categorized ***FARMLINE*** as a "popular" publication, not a technical one.

Two periodicals were combined in 1980 to create ***FARMLINE***. They were *Agricultural Situation*, which dated from the 1920's, and *Farm Index*, founded in the 1960's.

The subjects covered in ***FARMLINE*** have changed over the years. Some of the new or newly prominent terms appearing in the magazine recently have included: Nafta and GATT, EEP and CAP, Swampbuster and WRP, horticulture and aquaculture, high value products and no-till farming, canola and kenaf, flex acres and conservation compliance. And of course we have always provided coverage of the old standbys: corn and hogs, wheat and beef cattle, cotton and dairy, soybeans and broilers, rural development and food marketing.

We are proud of ***FARMLINE*** and its contributions. In our files we have letters of praise and appreciation. We have certificates and plaques from contests--writing, design, and editing.

The Federal Government is changing. Down-sizing is occurring, with budget cuts, and staff reductions. Programs change and priorities change. ***FARMLINE*** is history, but other USDA publications and information programs remain, and will be improved.

ERS will continue to have an extensive, vigorous program of research, analysis, and information dissemination. We'll be trying to serve the citizens and taxpayers better than ever.

Keep in touch.

--Jack Harrison

FARMLINE

AGRICULTURE...NATURAL RESOURCES...RURAL DEVELOPMENT
Practical economic intelligence from USDA's Economic Research Service

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Conservation Tillage Shows Large Gains in Corn, Soybeans

U.S. producers have become less dependent on the moldboard plow since the late 1980's, but use of conventional tillage systems still predominates, according to economist Len Bull of USDA's Economic Research Service.

Producers' reliance on the moldboard plow has declined in recent years. By 1992, only 12 percent or less of acreage planted to major crops was plowed with a moldboard.

Under the provisions of the Food Security Act of 1985 (commonly known as the 1985 farm bill), producers who participate in USDA program benefits must implement conservation plans (approximately 75 percent of which include residue management) to reduce soil erosion by December 31, 1994, or risk losing program benefits.

In a **conventional tillage** system, previous crop residue and topsoil are mixed or inverted through plowing, power tilling, or multiple disking. This system leaves crop residue almost completely buried. It also smooths and powders the soil, rendering it vulnerable to erosion by water and wind.

Conventional tillage without the moldboard plow is the leading tillage method among producers, although it usually leaves less than 15-percent residue on the soil surface after planting.

For areas susceptible to water erosion, any tillage and planting system that leaves 30 percent or more of the soil surface covered after planting is defined as **conservation tillage.** In areas vulnerable to wind erosion, at least 1,000 pounds of flat, small-grain residue equivalent must be left on the surface during the critical wind erosion period to meet the definition of conservation tillage.

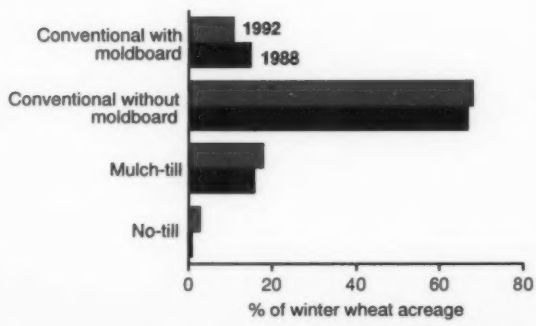
However, conventional tillage without the moldboard plow is the leading tillage method among U.S. producers.

Producers are using a variety of tillage systems to help meet the requirements for soil conservation mandated by the 1985 farm bill. Here are the most common types of conservation tillage.

With **mulch-tillage,** the soil is worked before planting, but more than 30 percent of the soil surface remains covered. Advantages of mulch-tillage include savings in time, fuel, and labor compared with conventional tillage. Mulch-tillage can be adapted to several soil types, including poorly drained ones. This technique has become the second most popular tillage system.

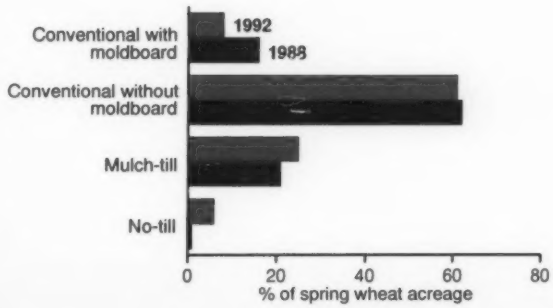
Winter Wheat Tillage

Winter wheat producers increased use of mulch-till from 16 to 18% between 1988 and 1992, and no-till from 1 to 3%. Conventional tillage with moldboard plow declined from 15 to 11%, while conventional tillage without moldboard rose to 68%.

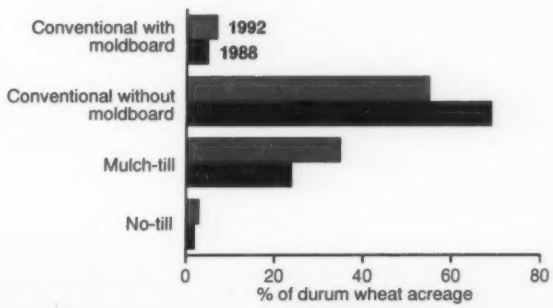


Spring Wheat Tillage

Spring wheat producers increased use of mulch-till from 21 to 25% between 1988 and 1992, and use of no-till from 1 to 6%. Use of conventional tillage with moldboard plow declined from 16 to 8%, while use of conventional tillage wirhout moldboard fell from 62 to 61%.



Durum wheat producers increased use of mulch-till from 24 to 35% between 1988 and 1992, and use of no-till from 2 to 3%. They increased use of conventional tillage with moldboard plow from 5 to 7%, and decreased use of conventional tillage without moldboard from 69 to 55%.



The **no-till method** is the most effective technique for reducing soil erosion. With this method, the soil is left undisturbed from harvest to planting. Narrow seedbeds or slots are drilled by a planter or drill at planting time. In 1992, producers used no-till on 14 percent or less of their acreage of major program crops.

With no-till, producers can reduce soil erosion by 75 percent or more compared to conventional tillage. Producers using no-till also make fewer passes across the field, thereby saving fuel and time, and reduce moisture evaporation.

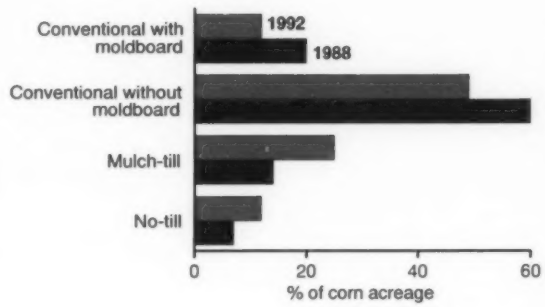
"Some producers have been hesitant to adopt the no-till system because of their perception that it lowers yields and requires significantly heavier use of pesticides," Bull says. "These perceptions are not consistent with the results of many studies on crops produced with the no-till technique."

With **ridge-tillage,** crop residue is left on the soil surface between ridges. As with no-till, the soil is left undisturbed from harvest to planting. ■

Based on information provided by economist Len Bull, Resources and Technology Division, Economic Research Service.

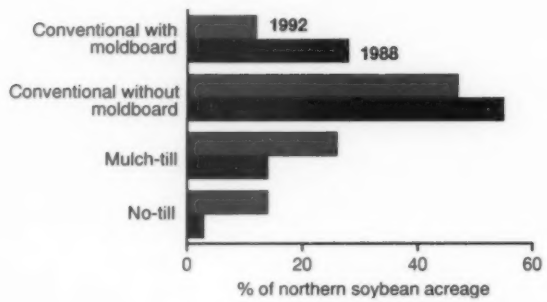
Corn Tillage

Producers in 10 major corn producing States increased use of mulch-till from 14 to 25% between 1988 and 1992. Use of conventional tillage with moldboard plow decreased from 20 to 12%, and use of conventional tillage without moldboard fell from 60 to 49%.

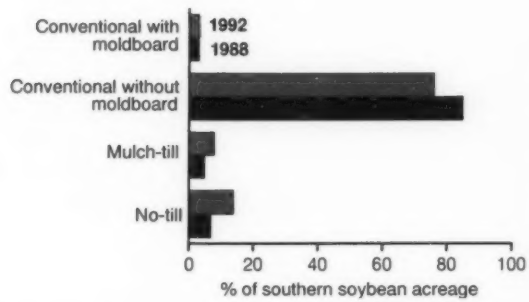


Soybean Tillage

Soybean producers in northern State (IL,IN, IA, MN, MO, NE, OH) increased use of mulch-till from 14 to 26% between 1988 and 1992 and no-till from 3 to 14%. Their use of conventional tillage with oldboard plow declined from 28 to 12%, and use of conventional tillage without moldboard plow fell from 55 to 47%.



Producers in southern soybean States (AR, GA, KY, LA, MS, NC, TN), increased use of mulch-till from 5 to 8% between 1988 and 1992, and use of no-till from 7 to 14%. Their use of conventional tillage without moldboard plow decreased from 85 to 76%, and use of conventional tillage with moldboard plow remained unchanged.



Cotton Ginning Charges Decreased in 1991/92

Average charges for ginning cotton during the 1991/92 season (August 1-July 31) ranged from $34.19 per bale in Tennessee to $57.33 per bale in New Mexico.

The U.S. average was $42.61 for ginning and wrapping a 480-pound bale. This was $1.07 below the average charge for the previous year.

Data on ginning charges are collected by USDA's Economic Research Service (ERS) in an annual mail survey. The survey does not cover extra long staple (ELS) cotton, which accounts for about 3 percent of U.S. cotton and requires a different type of ginning equipment.

"The lower average ginning charge reflects sharply larger cotton production in recent years, and efforts by the industry to share the benefits of higher gin volumes," says ERS economist Edward H. Glade, Jr.

Average charges declined in seven States and increased in seven during 1991/92. Mississippi had the largest decline, $1.81 per bale, and North Carolina the biggest increase, $1.25 per bale.

The wrapping material used for most cotton bales is woven polypropylene, a petroleum product, Glade says. Small amounts of burlap, jute, and cotton materials are also used for wrapping bales.

A total of 1,500 cotton gins operated in the 14 primary cotton producing States during 1991/92. This was a decrease of 33 gins from the previous year, Glade says. (Outside the primary cotton States, three gins were operating in Florida, one in Virginia, and one in Kansas.)

"The larger cotton crops of the past few years have helped moderate the long-term decline in gin numbers," Glade says.

"Larger cotton crops have helped moderate the decline in gin numbers."

Texas had the largest decline (22) in number of gins in 1991/92. North Carolina and South Carolina had increases in their gin numbers.

In 1991/92, the average volume per gin climbed to 11,372 bales, up 16 percent from a year earlier. Volumes for the season varied from a high of 20,953 bales per gin in California to 3,000 in New Mexico.

Machine-picked cotton accounted for 79 percent of the 1991/92 crop, up from 73 percent a year earlier. Machine-stripping was used on the remaining 21 percent. Texas, Oklahoma, and New Mexico, which primarily use machine-stripping, had lower production in 1991/92, which reduced the share for that method of harvesting.

Machine stripping removes all the cotton at once, stripping everything off the plant. This method results in more leaves, stems, and other "trash" in the cotton. Although picking is usually done twice during the harvest season, it is sometimes only done once, depending on the weather.

"Modules are being used more than ever as a method of temporary cotton storage," Glade says. A record 63 percent of the 1991/92 cotton crop was ginned from modules. The remaining 37 percent was ginned from traditional trailers.

Six years earlier, in 1985/86, just 39 percent of the crop was ginned from modules, and

Cotton Ginning Volume and Charges, 1991/92[1]

	Number of gins	Bales ginned (1,000)	Volume per gin (bales)	Ginning charges per bale	Amt. ginned from modules (percent)
Alabama	70	543	7,758	$35.10	63
Arizona	85	1,018	11,977	41.88	73
Arkansas	138	1,528	11,073	36.20	49
California	126	2,640	20,953	45.54	82
Georgia	58	702	12,103	41.04	52
Louisiana	85	1,422	16,730	36.54	51
Mississippi	181	2,216	12,243	36.39	51
Missouri	45	415	9,223	38.95	53
New Mexico	22	66	3,000	57.33	38
North Carolina	45	634	14,089	49.06	25
Oklahoma	61	231	3,787	50.47	42
South Carolina	43	328	7,628	46.90	11
Tennessee	69	689	9,986	34.19	25
Texas	472	4,626	9,801	48.93	83
U.S.	1,500	17,058	11,372	42.61	63

[1]Average charges for saw-ginned upland cotton; season August 1- July 31.
Source: Economic Research Service, USDA, and U.S. Bureau of the Census.

A module builder compresses seed cotton for storage in a field.

A workman fastens a tarpaulin over a module of cotton.

Workmen operate a baler at a cotton gin.

Photos courtesy National Cotton Council

61 percent was ginned from trailers. Use of modules in 1991/92 ranged from 83 percent in Texas and 82 percent in California to 11 percent in South Carolina.

Module-making machines have been available since the late 1970's. Some of the machines are owned by gins, and some by producers.

"Modules can extend the ginning season," Glade says, "whereas if a producer uses trailers they could all be full, waiting on the gin to catch up." But modules can just be left in the fields, covered with tarps, until the gin is ready for the cotton.

"Seed cotton," the term for cotton that has not been ginned, weighs two or three times as much as ginned cotton, because of seeds and other material mixed in with it. The cotton that goes into a 480-pound bale usually contains about 800 pounds of seed.

In 1991/92, it took 1,466 pounds (U.S. average) of machine-picked seed cotton to produce a 480-pound bale, and 2,185 pounds of machine-stripped seed cotton to make up a bale.

Charges for the four primary cotton warehouse services changed only slightly in 1991/92, Glade says. U.S. average charges were $2.88 per bale for receiving, $7.77 per bale for compressing to universal density, $1.80 per bale per month for storage, and $5.92 per bale for outhandling.

"After ginning, cotton bales are usually moved directly to local warehouses for storage and the other services necessary for marketing," Glade says.

The economist adds that more than two-thirds of U.S. gins now have universal density compression equipment, making traditional warehouse compression unnecessary.

The universal density bale, established in the late 1960's, provides a standard product no matter where it is bought and sold. Bales of uniform size also allow for efficient storage and handling during transportation and at textile mills.

A universal size bale is about 55 inches by 27 inches by 21 inches and is compressed to 28 pounds of cotton per cubic foot.

Another byproduct of ginning is linters, which are very short cotton fibers attached to the seeds after ginning. They are removed from the seeds in the crushing mills and have many uses, such as for upholstery and padding materials, writing paper, and nonwoven fabric. Linters can also be blended with cotton in making certain types of yarn. ■

Based primarily on information provided by economist Edward H. Glade, Jr., Commodity Economics Division, Economic Research Service.

For a copy of the report on which this article is based, call 1-800-999-6779 and ask for *Cotton Ginning Charges, Harvesting Practices, and Selected Marketing Costs, 1991/92 Season*, SB-852. Or write to ERS-NASS, 341 Victory Drive, Herndon, VA 22070. The cost is $6 per copy (foreign addresses add 25 percent).

1993 Reports Calendar
July-December

Titles of situation and outlook and other reports issued by the Economic Research Service are printed in **boldface.** *Summaries of reports are released at 3 p.m. ET on the dates indicated. Copies of complete reports are due off press about 2 weeks later.*

World Agricultural Supply and Demand Estimates, issued by the World Agricultural Outlook Board, are also shown in bold. These reports are issued in their entirety at 3 p.m. ET on the indicated dates.

JULY

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
			1	2 Poultry Slaughter
5 HOLIDAY	6 Agricultural Prices - Annual Crop Progress Egg Products Cotton & Wool Update	7 Broiler Hatchery Dairy Products	8 Noncitrus Fruits & Nuts - Annual	9
12 Crop Production Crop Progress World Agricultural Supply & Demand	13 Turkey Hatchery	14 Broiler Hatchery	15 Milk Production	16 Vegetables Livestock & Poultry
19 Crop Progress Agricultural Outlook	20 Wheat U.S. Agricultural Trade Update	21 Broiler Hatchery Cold Storage Mink Fruit & Tree Nuts Yearbook	22 Catfish Processing	23 Cattle Cattle on Feed Livestock Slaughter Oil Crops Yearbook Livestock & Poultry
26 Crop Progress Eggs, Chickens, & Turkeys Rice Yearbook	27 Vegetables & Specialties	28 Broiler Hatchery Peanut Stocks & Processing	29 Catfish Production Farm Numbers & Land in Farms	30 Agricultural Prices

AUGUST

MONDAY	TUESDAY	WEDNESDAY
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9 Crop Progress	10	11 Broiler Hatchery Cotton Ginnings Crop Production World Agricultural Supply & Demand
16 Crop Progress Milk Production	17 Cranberries Farm Labor	18 Broiler Hatchery Turkeys Fruit & Tree Nuts
23 Catfish Processing Crop Progress Eggs, Chickens, & Turkeys U.S. Agricultural Trade Update	24 Hazelnut Production - Tentative	25 Broiler Hatchery Cotton & Wool
30 Crop Progress	31 Agricultural Prices Rice Stocks	

OCTOBER

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
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4 Crop Progress Egg Products Poultry Slaughter	5 Dairy Products Cotton & Wool Update	6 Broiler Hatchery	7	8
11 HOLIDAY	12 Cotton Ginnings Crop Production Crop Progress World Agricultural Supply & Demand	13 Broiler Hatchery	14 Turkey Hatchery Agricultural Resources - Inputs	15 Milk Production Vegetables
18 Crop Progress	19	20 Broiler Hatchery Agriculture Outlook U.S. Agricultural Trade Update	21 Catfish Processing Eggs, Chickens, & Turkeys Rice	22 Cattle on Feed Cold Storage Livestock Slaughter Oil Crops Livestock & Poultry Update
25 Cotton Ginnings Crop Progress Dairy	26	27 Broiler Hatchery	28 Peanut Stocks & Processing	29 Agricultural Prices Catfish Production Rice Stocks

NOVEMBER

MONDAY	TUESDAY	WEDNESDA
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8 Crop Progress	9 Cotton Ginnings Crop Production World Agricultural Supply & Demand	10 Broiler Hatchery Vegetables & Specialties
15 Crop Progress Turkey Hatchery Livestock & Poultry	16 Farm Labor Milk Production	17 Broiler Hatchery Fruit & Tree Nut
22 Catfish Processing Cold Storage Crop Progress U.S. Agricultural Trade Update Livestock & Poultry Update	23 Eggs, Chickens, & Turkeys Sheep & Lambs on Feed Feed	24 Broiler Hatchery Cotton Ginnings
29 Crop Progress Peanut Stocks & Processing	30 Agricultural Prices Agricultural Exports **OUTLOOK CONFERENCE**	

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Titles of reports issued by the National Agricultural Statistics Service are printed in lightface. Complete reports are released, usually at 3 p.m., on the dates indicated.

To subscribe to any of these reports, write to ERS-NASS, 341 Victory Drive, Herndon, VA 22070. Or, call 1-800-999-6779 in the United States and Canada.

Other areas, please call 703-834-0125. For details on electronic access to these reports, call 202-720-5505.

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Hatchery s & Tree Nuts	19 Mushrooms Agricultural Outlook	20 Cattle on Feed Cold Storage Livestock Slaughter Feed Livestock & Poultry Update
Hatchery n & Wool	26 Dairy	27 Peanut Stocks & Processing Pistachio Production - Tentative Agricultural Exports

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WEDNESDAY	THURSDAY	FRIDAY
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DECEMBER

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
		1 Broiler Hatchery OUTLOOK CONFERENCE	2 OUTLOOK CONFERENCE	3 Dairy Products Egg Products Poultry Slaughter
6 Crop Progress	7	8 Broiler Hatchery	9 Cotton Ginnings Crop Production World Agricultural Supply & Demand	10 Dairy
13 Potato Stocks Agricultural Income & Finance	14 Turkey Hatchery Sugar & Sweetener	15 Broiler Hatchery Milk Production Industrial Uses of Ag. Materials	16 Tobacco Yearbook	17 Cattle on Feed Agricultural Outlook
20 Catfish Processing	21 Cold Storage U.S. Agricultural Trade Update	22 Broiler Hatchery Cotton Ginnings Eggs, Chickens, & Turkeys Livestock Slaughter Livestock & Poultry Update	23	24 HOLIDAY
27	28 Peanut Stocks & Processing	29 Broiler Hatchery Hogs & Pigs	30 Agricultural Prices	31 HOLIDAY

Poverty a Persistent Problem In Rural America

Poverty is as much a fact of life in rural America as it is in the Nation's inner cities.

"Certainly, the rural poor are more dispersed and less visible than the urban poor," says economist Robert Hoppe of USDA's Economic Research Service. "Statistics show, however, that severe poverty also exists in rural areas."

He notes that the public generally perceives poverty as an urban problem, probably because most people live in or near large cities and are therefore able to observe urban poverty firsthand.

In fact, Hoppe says, the Federal Government's anti-poverty policies have mainly been aimed at the urban poor. "But if poor people living in nonmetropolitan areas are to be helped, understanding their poverty and how it differs from metropolitan poverty is important," he says.

To begin with, the nonmetro poor are much more likely to live in married-couple families than the poor in central cities--or even the poor in suburban areas. About 44 percent of the nonmetro poor lived in this type of family in 1990, compared with 37 percent of the suburban poor and only 27 percent of the central city poor.

"In contrast, about 45 percent of the central city poor lived in families headed by a woman, compared with about 30 percent of the suburban and nonmetro poor," says Hoppe.

A Growing Problem

Nevertheless, poverty among families headed by a woman is a growing problem in rural areas. The share of the nonmetro poor living in such families increased from 22 percent in 1969 to 30 percent in 1990.

The nonmetro poor are much more likely to live in married-couple families than the poor in central cities

"This growing share reflects not only a consistently high poverty rate for people in female-headed families, but also a gradually increasing share of the total nonmetro population living in that family type," Hoppe says. "The share of the total nonmetro population living in female-headed families increased from 8.4 percent in 1969 to 11.5 percent in 1990."

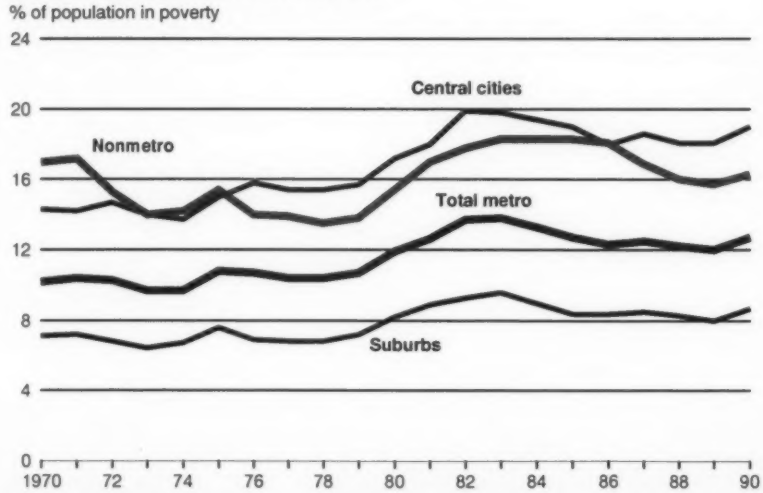
The racial characteristics of the nonmetro poor also differ from those of the metro poor.

"Whites comprised 73 percent of the poor in nonmetro areas and 79 percent in the suburbs," says Hoppe. "A much smaller share, 54 percent, of the central city poor were white."

He adds that in 1990, the central city poor population totaled 14 million persons, and the two other populations each included at least 9 million. In general, poverty rates for specific population groups--such as persons living in married-couple families--were higher in nonmetro than in metro areas. However, poverty rates were similar for most population groups in central cities and nonmetro areas.

"There were few significant differences between the poor in central cities and nonmetro areas," says Hoppe. "Unrelated individuals and blacks were the exceptions. Their poverty rates were much higher in nonmetro areas." (The poverty rate for unrelated individuals--those living alone or with nonrelatives--was 28 percent in nonmetro areas, but only 22 percent in central cities. The poverty rate for blacks was 41 percent in nonmetro areas and 34 percent in central cities.)

Over the Past Two Decades, the U.S. Rural Poverty Rate Has Exceeded the Total Metro Rate



Source: U.S. Census Bureau, Current Population Survey, various years.

Even though none of the poverty rates for specific groups was markedly higher in central cities than in nonmetro areas, the poverty rate for the whole population was higher in central cities.

"This apparent contradiction results from central cities' heavy concentration of families headed by a woman, a group with a very high poverty rate," says Hoppe. "About 20 percent of the central city population lived in families headed by a woman, compared with only 11 percent of the nonmetro population."

Obviously, married-couple families include two potential adult workers, while families headed by a woman are more likely to have only one potential worker.

"Even if one spouse in a married-couple family stays home to take care of children, the other spouse is free to work," says Hoppe. "Thus, the nonmetro poverty rate is more affected by the unemployment rate than the poverty rate of the central city."

Developing Poverty Definitions

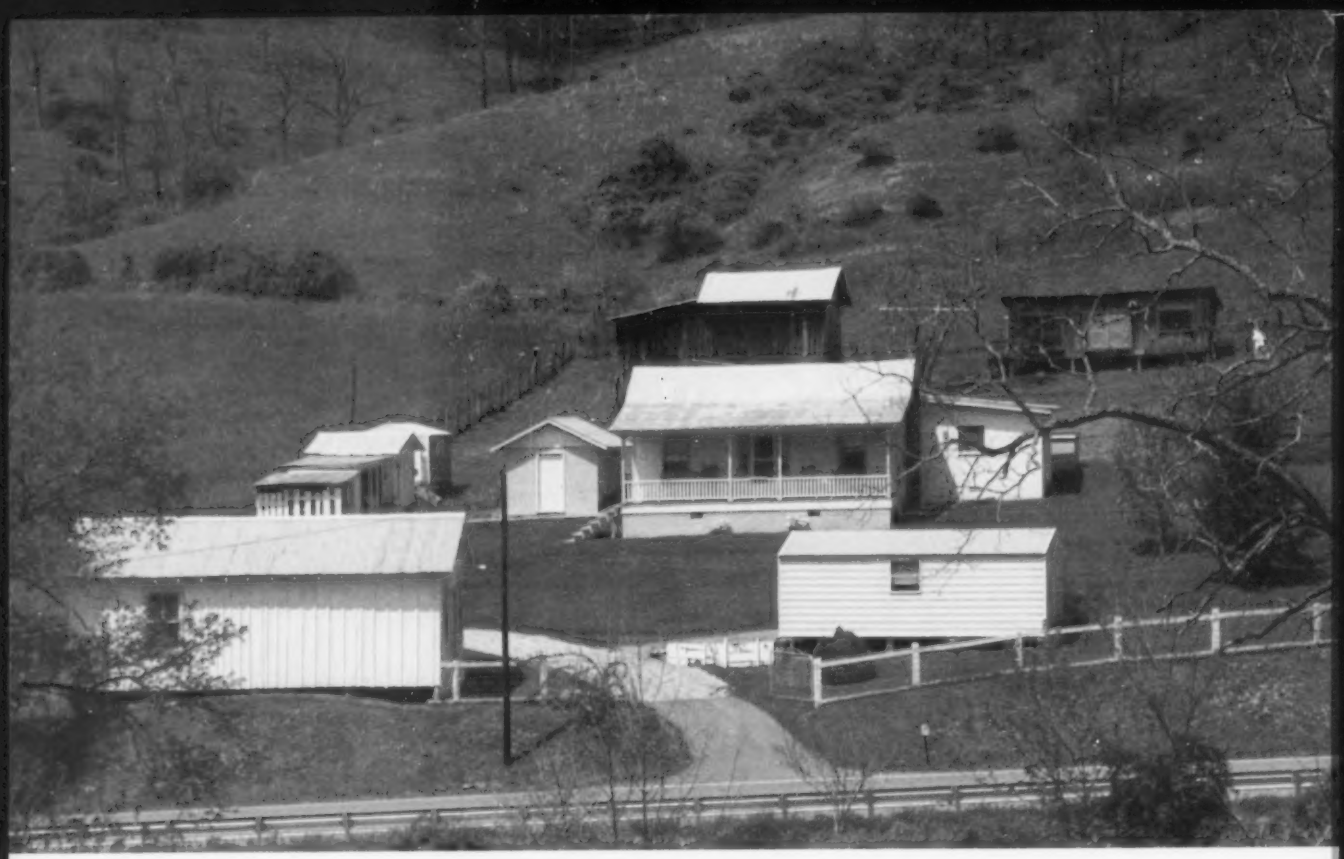
Although poverty may be described in many ways, the U.S. Census Bureau officially defines it as living below the income "threshold appropriate for the size and type of a person's family," says ERS economist Robert Hoppe. In fact, census officials use 48 poverty thresholds to determine whether a person is living in poverty.

"Different thresholds exist for elderly and nonelderly individuals, for two- person families with and without elderly members, and for families with different numbers of children," says Hoppe.

For example, the poverty line for a family of four with two children was $13,254 in 1990, the final year on which Hoppe's analysis is based. The poverty thresholds are adjusted annually by the U.S. Census Bureau—using the consumer price index calculated by the U.S. Dept. of Labor's Bureau of Labor Statistics—to reflect inflation.

A county is considered metro (or more precisely, part of a metropolitan statistical area) if it includes a city of at least 50,000 persons, or if it includes a Census Bureau-defined urbanized area of at least 50,000 with a total metropolitan population of at least 100,000 (75,000 in New England). In addition, a metro area may include other counties having strong commuting ties to a nearby central metro county.

"Metro areas are further divided into central cities and areas outside central cities, or suburbs," says Hoppe. "Areas classified as suburban include some relatively sparsely settled areas at the edges of metro areas, some areas that are similar to central cities in character, and some areas that closely resemble what people usually think of as suburbs."



Poverty Concentrated

Nonmetro poverty was concentrated in the South in 1990. The region was home to about 55 percent of the Nation's nonmetro poor, 30 percent of the central city poor, and 41 percent of the suburban poor.

"Poverty among blacks was even more pronounced in the South's nonmetro areas," says Hoppe. "Virtually all poor nonmetro blacks--97 percent--lived in the South. Of course, nonmetro blacks in general were heavily concentrated in the South--about 95 percent of this group lived there in 1990."

Additional evidence of this regional concentration comes from two research projects conducted in the 1980's.

"To further pinpoint poor or low-income nonmetro areas, USDA carried out two county-level studies," says Hoppe. "One study identified nonmetro counties with high poverty rates in the 1980 Census of Population, and the other identified counties that had chronically low per capita personal incomes over several decades. Both the high-poverty and persistently low-income counties were heavily concentrated in the South."

Of course, some progress has been made in the battle against nonmetro poverty, particularly in the late 1960's and in the 1970's. The nonmetro poverty rate fell from 20.2 percent in 1967 to 13.5 percent in 1978 (except for an increase during the 1973-75 recession). In central cities, suburbs, and metro areas as a whole, poverty rates were more stable during the period, varying within much narrower ranges.

"Not only did the nonmetro poverty rate decline in the early 1970's, but the gap between nonmetro and central city poverty rates also closed," says Hoppe. "By the late 1970's, the central city poverty rate exceeded the nonmetro poverty rate. This was a change from the late 1960's, when the nonmetro poverty rate was higher."

Poverty rates in both metro and nonmetro areas increased sharply in the early 1980's. Between 1979 and 1983, the official poverty rate climbed from 10.7 to 13.8 percent in metro areas as a whole, from 15.7 to 19.8 percent in central cities, from 7.2 to 9.6 percent in suburbs, and from 13.8 to 18.3 percent in nonmetro areas.

The Reasons Why

Three major factors were at work in boosting the poverty rates:

- Prices (as measured by the consumer price index) increased more rapidly than income in the late 1970's and early 1980's. Because the poverty thresholds are adjusted for inflation, they increased as rapidly as prices. This caused people whose income was just marginally above the poverty level to fall below that level if their income grew more slowly than prices and the poverty thresholds.
- Economic downturns from 1980 to 1982 reduced the earnings of some people enough to make them poor.
- Tightened eligibility requirements increased poverty by removing people from the welfare rolls or reducing their benefits.

"After 1983, the metro poverty rates declined somewhat as the downturns ended and inflation abated, but the nonmetro poverty rate stayed at about 18 percent through 1986," says Hoppe. "The nonmetro poverty rate began to fall in 1987, dropping to 15.7 percent by 1989."

In 1990, poverty rates were on the way up again, in response to the beginning of an economic downturn. And nonmetro areas appear to have experienced slow income growth in recent years, widening the income gap between metro and nonmetro areas.

"This gap can be measured by subtracting nonmetro per capita income from metro per capita income," says Hoppe. "According to U.S. Census Bureau data, metro per capita income exceeded nonmetro income by about $3,100 in 1973, and by $5,200 by 1989, measured in 1989 dollars."

In other words, nonmetro income slipped from 78 percent of metro income in 1973 to 72 percent by 1989.

Rural Problems

"Slower nonmetro income growth can be reflected in a stubbornly high poverty rate, even during recoveries, such as the one following the economic downturns of the early 1980's," says Hoppe. "In addition, those economic downturns were particularly hard on nonmetro areas, which experienced a greater rise in unemployment rates and recovered more slowly."

He goes on to say that this delayed recovery could help explain the delayed drop in the nonmetro poverty rate, because nonmetro poverty appears to be particularly sensitive to unemployment. About 63 percent of the variation in the nonmetro poverty rate between 1973 and 1989 was explained by variations in the unemployment rate, compared with only 22 percent in metro areas.

"Moreover, the decline in the nonmetro poverty rate, when it finally did occur, was associated with a large drop in the unemployment rate," says Hoppe. "The 2.4-percentage-point drop in the nonmetro poverty rate between 1986 and 1989 occurred at the same time as a 2.6-percentage-point drop in the nonmetro unemployment rate."

Despite such evidence, some analysts have questioned the severity of rural poverty.

"Their argument is that official poverty statistics do not take into account benefits received in kind--such as food stamps, Medicare, and Medicaid--along with those received in cash," says Hoppe, "and that the poverty thresholds are not adjusted to reflect the supposedly lower living costs in nonmetro areas."

In the early 1980's, he adds, the Census Bureau embarked on a research program to examine the effects of a broader definition of income--including adjustments of taxes, capital gains, and noncash benefits from both employers and the Government. Making these adjustments does reduce the poverty rate in both metro and nonmetro areas, census officials found.

"But even after these adjustments, the nonmetro poverty rate exceeded the metro rate each year," says Hoppe. "In 1990, for example, the nonmetro adjusted poverty rate was still 3 percentage points higher than the corresponding metro rate."

Geographical differences in the cost of living offer a more difficult problem, researchers have found. "Although nonmetro areas are generally perceived as having lower living costs," says Hoppe, "it is difficult to find consistent differences in the cost of living between metro and nonmetro areas."

Adjusting poverty statistics to reflect geographical differences in the cost of living would be a major undertaking. Developing a cost-of-living index to make such adjustments would be a costly and time-consuming process, he says.

"Constructing the index would require large amounts of data and would be complicated by regional differences in the types and quality of consumer goods available," says Hoppe. "Using an inaccurate index might introduce more problems and inequities than not making any adjustments at all."

Despite proposed refinements in the definition and measurement of poverty to accommodate in-kind benefit and cost-of-living differentials, he goes on to say, the current measures adequately demonstrate that poverty, especially in nonmetro areas, remains a persistent problem. ■

Based largely on information provided by Robert Hoppe, Agriculture and Rural Economy Division, Economic Research Service.

Canola Growers Face Several Hurdles

Canola oil has been gaining popularity with U.S. consumers. Its use in this country increased 223 percent between 1987 and 1992, from 263 million pounds to 849 million pounds. However, it still accounts for less than 5 percent of the vegetable oils market.

Some consumers prefer canola oil for health reasons, because it has the lowest level of saturated fat among the major vegetable oils, according to economist George Douvelis of USDA's Economic Research Service.

A diet with less saturated fat reduces the risk of heart disease and certain types of cancer, according to medical research. The 1988 Surgeon General's Report on Nutrition and Health urged Americans to lower their intake of fat, especially saturated fat.

Canola has 6 percent saturated fat, safflower oil 9 percent, sunflowerseed oil 11 percent, corn oil 13 percent, olive oil 14 percent, soybean oil 15 percent, peanut oil 18 percent, cottonseed oil 27 percent, and palm oil 51 percent, Douvelis says.

Canola oil first appeared on U.S. grocery shelves in 1985, when the U.S. Food and Drug Administration (FDA) accorded it GRAS ("generally recognized as safe") status. It is used as a cooking oil, in margarine, and in snack foods.

Congress gave canola production a boost in the 1990 Farm Act—formally titled the Food, Agriculture, Conservation, and Trade Act—by establishing loan programs for minor oilseeds (canola, sunflowerseed, rapeseed, flaxseed, mustard seed, and safflower). The legislation also permitted canola growers to plant canola on up to 15 percent of their wheat, feed grain, cotton, and rice base acres and on wheat and feed grain 0-92 acres without losing Government benefits.

Consumer interest increasing because of health issues.

Growers Face Problems

All of this would seem to be good news for U.S. farmers interested in diversifying into canola. But you'd be hard pressed to convince Robert Nixon of that. He's one of several farmers in Orange County, Virginia, who tried growing canola for the first time in 1991.

After harvest, Nixon could not find a local buyer who would pay what he considered a reasonable price for his canola crop. He finally shipped it to Canada, with the transportation costs cutting deeply into his profits.

"If marketing outlets don't increase," says Nixon, "I don't think you'll see much canola grown in Virginia."

In previous years, he could have taken his seed to a plant in Augusta, Georgia, to be crushed into oil. But that facility, owned by the Archer Daniels Midland Co. (ADM), no longer processes canola. It is now used for other oilseeds.

"You have to have enough volume to achieve economies of scale," says Parry Dixon, ADM's director of economic research. "But the volume of canola just wasn't there."

This illustrates the dilemma for the fledgling canola industry. Unless there's a large amount of canola planted, processors like ADM can't justify investing in crushing plants. And if crushing facilities are not available, farmers are unlikely to switch to the crop.

Canola is a type of rapeseed that is lower in erucic acid, a fatty acid which not only presents potential health risks to humans but reduces the palatability and nutritional value as livestock feed, Douvelis says. Some rapeseed has been grown in this country in past years, mostly for industrial uses.

Canola competes with soybeans. The prices that canola oil and meal can command are driven by the prices of soybean products, Douvelis says. Soybean oil is the leading vegetable oil in the United States, accounting for 70 percent of the market in 1991.

"Chickens are a crucial part of the formula," he says. "They eat a lot of soybean meal and thus are very important to the soybean industry. Soybean meal is also used in feeding other types of livestock."

Canola meal is a less valuable livestock feed than soybean meal, Douvelis says, because it's lower in protein and has a higher roughage content.

That adds to the financial uncertainty facing canola producers, the economist says.

Competition Abroad

Another reason that U.S. canola acreage has not been increasing rapidly is the availability of a large supply of canola oil on the international market, mainly in Canada, Douvelis says.

In 1992/93, the total U.S. supply of canola oil is expected to be 917 million pounds, of which only 28 million pounds, or 3 percent, will be produced domestically and the rest imported. In 1991, about 80 percent of U.S. canola oil imports came from Canada.

Canadian farmers have much more experience with canola than do U.S. farmers, says Paul Raymer, a University of Georgia agronomist.

"Canada has been working on canola since 1940, while the United States has been working on it only since 1985," Raymer says. "That accounts for the large difference in production. Canada has been able to develop the infrastructure to support the crop, the chemicals to control pests, and a seed industry."

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As long as Canada can supply the U.S. market with plentiful, economical supplies of canola, it will be difficult to boost demand for U.S.-grown canola, Douvelis says. Canola is usually grown in areas where wheat is grown. Wheat has an established Government support program, which makes it difficult for canola to compete, the economist says.

Agronomic Uncertainties

Plant breeders haven't yet developed canola varieties that are well-suited to many areas of the United States.

"We have a long way to go in almost all our production regions in developing well-adapted varieties," Raymer says.

During the winter of 1991, for instance, virtually all the canola acreage in Indiana, Ohio, Kentucky, and Missouri was lost to winterkill.

A lack of pesticides for use on canola is another problem facing producers.

"The agricultural chemical companies find it more profitable to develop products for larger acreage crops or crops that need a lot of protection," explains Jim Gray, crop protection manager for InterMountain Canola, the largest U.S. marketer of canola oil.

"When a variety of chemicals is registered for use on a particular crop, it encourages producers to plant that crop," Gray says. "And the more acres that are planted to that crop, the more products that get registered for use on it, because it's a viable market."

U.S. canola acreage is relatively small, so chemical companies have little incentive to develop canola-related pesticides, Gray says.

Labeling Guidelines Could Help

A boost for the U.S. canola industry could come from new Federal regulations for nutritional labeling of food. The new requirements issued by the Food and Drug Administration (FDA) are scheduled to go into effect in May 1994.

To qualify for the label "low in saturated fat," under the new guidelines, an oil can have no more than 1 gram of saturated fatty acid per serving, with not more than 15 percent of its calories derived from saturated fat.

"Canola oil is the only vegetable oil widely available at this time that meets the FDA standard," says John Weihrauch, a nutritionist with USDA's Human Nutrition Information Service.

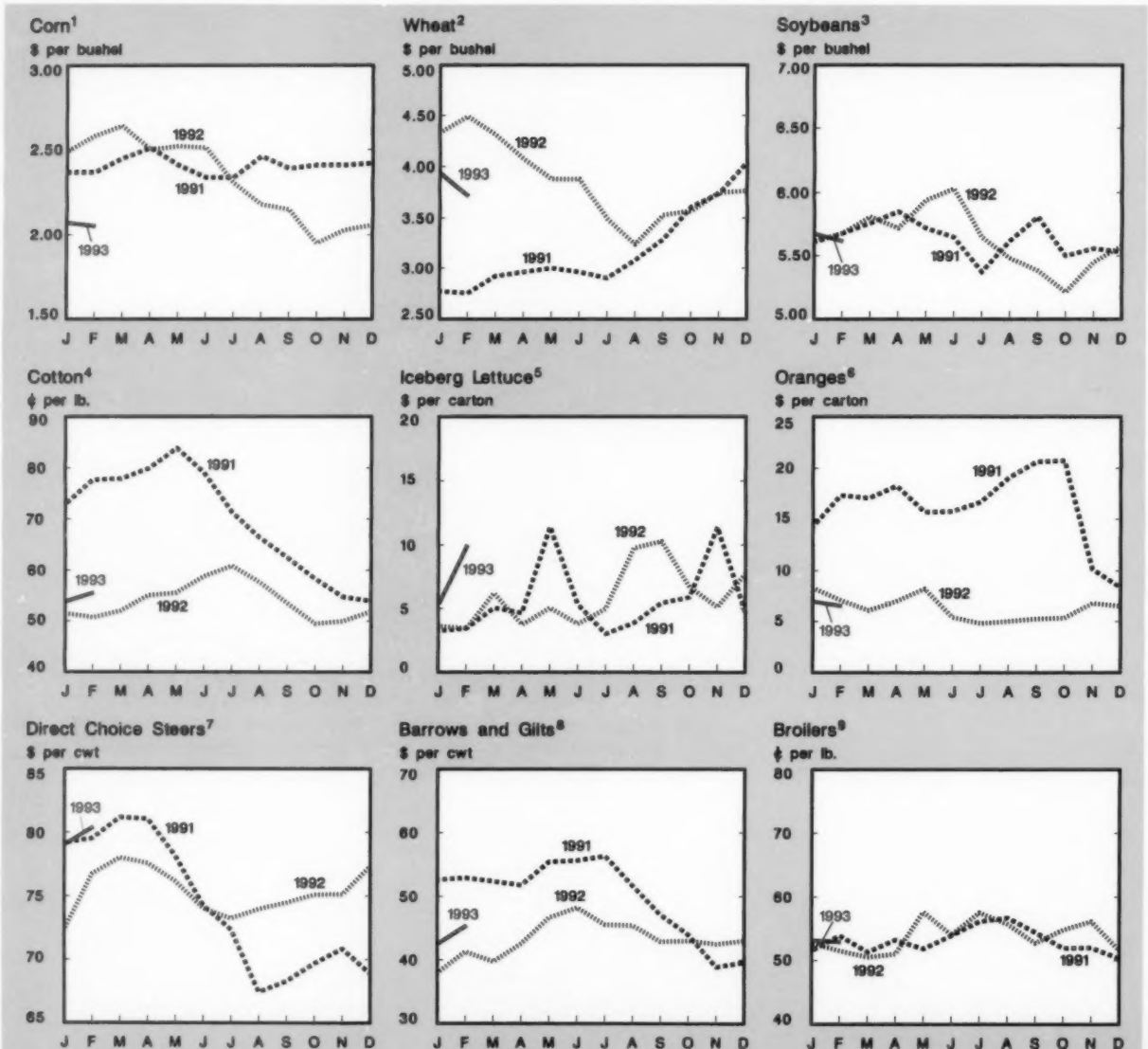
He adds that the only other vegetable oils that meet the standard—high-oleic-acid safflower oil, almond oil, apricot kernel oil, and hazelnut oil—are currently available in relatively small quantities. The FDA standard could therefore mean an increase in canola oil purchases. ■

Based on information provided by economist George Douvelis, Commodity Economics Division, Economic Research Service, and other sources cited in the article.

FARMLINE TRENDS

Monthly Price Monitor

USDA's February 1993 inflation-adjusted index of farm prices, from the National Agricultural Statistics Service's Agricultural Prices report, was unchanged from January, but 2.8% below a year earlier. Wholesale market prices follow. All major grain crops charted were down. Corn declined 2¢ to $2.05 per bushel, wheat dropped 22¢ to $3.71 per bushel, and soybeans fell 6¢ to $5.61 per bushel. Cotton rose 1.7¢ to 55.4¢ per pound. Iceberg lettuce jumped $4.59 to $9.93 per carton. Oranges fell 44¢ to $6.40 per carton. Direct choice steers, at $80.35 per hundredweight, hit the $80 range for the first time since April 1991. Barrows and gilts increased $2.81 to $45.24 per hundredweight. Broilers declined slightly to 52.7¢ per pound.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1-1/16", spot market price. [5]Standard carton 24's, California-Arizona. [6]Central California, Standard carton. [7]Nebraska. [8]Omaha. [9]Wholesale, New York. All prices shown are monthly averages.

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